

REEVALUATION OF UNRECOGNIZED NEARCTIC *BIBIO* GEOFFROY
NAMES (DIPTERA: BIBIONIDAE)

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Abstract.—Five names of *Biblio* (Diptera: Bibionidae) were considered unrecognizable in the last catalog of Diptera of America North of Mexico. These names are reevaluated. **New synonyms** are: *B. fraternus* Loew and *B. baltimoricus* Macquart = *B. articulatus* Say; *B. castanipes* Jaenicke = *B. albipennis* Say; and *B. curtipes* James = *B. tristis* Williston. Lectotypes are designated for *B. baltimoricus* and *B. castanipes*. *Biblio pallipes* Say and *B. thoracicus* Say are considered *nomen dubia*.

Key Words: *Biblio*, Bibionidae, Nearctic

Hardy's (1965) catalog of Bibionidae of America North of Mexico included five names of *Biblio* Geoffroy which were considered unrecognizable due to inadequate original descriptions and/or lost or unavailable type material (Hardy 1945). A reevaluation of the original descriptions and available type material has resulted in a change of status for three. *Biblio tristis* Williston, although recognized by Hardy (1945, 1965), has never been properly placed, and the status of this species is discussed. *Biblio pallipes* Say and *B. thoracicus* Say are discussed and are considered *nomen dubia*.

MATERIAL AND METHODS

Terminology follows McAlpine (1981). Acronyms of collections where material has been deposited follows Arnett et al. (1993). The following made material available for study: American Museum of Natural History, New York, NY (AMNH); Nigel Wyatt, The Natural History Museum, London (BMNH); Boris C. Kondratieff, C. P. Gil-

lette Museum, Colorado State University, Fort Collins (CSUC); Michael S. Kelly and Leslie C. Costa, Museum of Comparative Zoology, Harvard University, Cambridge, MA (MCZC); Forschungsinstitut und Naturmuseum Senckenberg, Germany (SMFD); Carl A. Olson, University of Arizona, Tucson (UAIC).

To insure positive identifications of primary types, label data for designated lectotypes is presented following O'Hara (1982): Labels are cited in full starting from the top down, with data from each label enclosed in quotation marks. Original spelling and punctuation are preserved, label lines are indicated by a slash mark (/), except when slashes are used on original labels to separate date information, and square brackets signify information not included on the specimen label.

Lectotypes are designated in accordance with Recommendation 73F of the International Code of Zoological Nomenclature (International Commission on Zoological Nomenclature 1985).

RESULTS

Bibio albipennis Say

Bibio albipennis Say 1823: 77. Syntype(s) destroyed, USA: Pennsylvania.

Bibio castanipes Jaennicke 1867: 317. Lectotype female (here designated) (SMFD), labeled: "Jilinois Am: b^a./D^r. Reufs." "LECTOTYPE/*Bibio castanipes*/Jaennicke/designated by/S. Fitzgerald 1997 [red label]". **New synonym.**

Bibio albipennis Say is one of the most commonly collected species in the United States. *Bibio castanipes* Jaennicke was unrecognized by Hardy (1945) due to the inadequate original description. Examination of the lectotype female (here designated), indicates this species is conspecific with *B. albipennis*. Only two species of Nearctic *Bibio*, *B. albipennis* and *B. curtipes* James (1936: 5; see discussion of *B. tristis* below), have the r-m cross vein one-fourth to one-third the length of the basal portion of Rs vein (Fitzgerald 1996). The females of *B. albipennis* and *B. curtipes* are distinguished by color of the legs. The lectotype female of *B. castanipes* is old and the coloration is greatly faded. However, the original description of *B. castanipes* stated that the legs were chestnut brown, which corresponds to the black to dark brown legs of *B. albipennis*, not the orange yellow legs of *B. curtipes*. The apical palpal segment of the female of *B. albipennis* is more elongate than that of *B. curtipes*, which is very minute, sometimes appearing vestigial or absent. The lectotype of *B. castanipes* has the apical palpal segment elongate like *B. albipennis*.

Bibio articulatus Say

Bibio articulatus Say 1823: 77. Syntype female(s) destroyed, USA: Pennsylvania.

Bibio baltimoricus Macquart 1855: 37. Lectotype female (here designated) (BMNH), labeled: "[circle with blue outline] Syn-/type" "SYNTYPE/*Bibio/baltimoricus*/ Macquart/det. J.E. Chainey, 1992" "[hand written] *Baltimoricus*/♂. Macquart]. n[ew]. sp[ecies]/Baltimore.

(D. [illegible].)" "USA:/Baltimore/ex Bigot coll./BM 1960-539" "LECTOTYPE/*Bibio baltimoricus*/Macquart/designated by/S. Fitzgerald 1997". **New synonym.**

Bibio fraternus Loew 1864: 54. Syntype male(s) and female(s) (MCZC), USA: District of Columbia, Osten Sacken. **New synonym.**

Hardy (1945) stated that *B. articulatus* Say may be conspecific with *B. abbreviatus* Loew (1864: 54) or *B. fraternus* Loew, but left the status of the name in question due to the inadequacy of the original description and the lack of types. Although the types of *B. articulatus* are probably destroyed, the identity of the species can be determined from the original description. Both McAtee (1922) and Hardy (1945) indicated that the original description is inadequate because it does not refer to the length of the tarsal segments. The length of the hind basitarsus is important in distinguishing the male of *B. fraternus* from *B. abbreviatus* (Fitzgerald 1997). However, the original description of *B. articulatus* is of a female which can be distinguished by a set of characters exclusive of the length of the hind basitarsus. Only one species of Nearctic *Bibio*, *B. fraternus*, has the anterior spur of the fore tibia subequal to the posterior spine and the dorsum of the thorax orange yellow in the female.

Hardy (1945) stated that *B. baltimoricus* Macquart may be conspecific with *B. abbreviatus* or *B. fraternus*, but the original description is inadequate to fix its identity. Examination of the lectotype female and two paralectotype males (these types all here designated) of *B. baltimoricus* confirms that they are conspecific with *B. articulatus*. The male paralectotypes are in poor condition, but examination of their terminalia indicates that they are conspecific with *B. articulatus*. *Bibio articulatus* was discussed (diagnosed, with *B. abbreviatus*) and the male terminalia illustrated by Fitzgerald (1997).

Bibio tristis Williston

Bibio tristis Williston 1893: 113. Type(s) (apparently lost), USA: Western Kansas.

Bibio curtipes James 1936: 6. Holotype female (AMNH), USA: Colorado, Boulder; examined. **New synonym.**

Although recognized by Hardy (1945, 1965), *B. tristis* has not been properly placed in the literature. All specimens which I have examined identified as *B. tristis* (mostly by Hardy) represent *B. palliatus* McAtee (1922: 16) or *B. similis* James (1936: 5). Hardy (1945) stated that *B. tristis* is most similar to *B. xanthopus* Wiedemann (1828: 80), but can be distinguished by the black thoracic pile. Holt assigned specimens from the Graham Mountains, Arizona, to this species (McAtee 1922). Specimens examined (UAIC, CSUC) from Mt. Graham, Arizona, which match Hardy's (1945) concept of *B. tristis*, represent *B. xanthopus*. Although the type(s) of *B. tristis* are apparently lost (Hardy 1945), the identity of the species can be established from the original description. Williston (1893: 113, Fig. e) provided an illustration of a female of *B. tristis* including details of the wing venation. In this illustration the r-m crossvein is one-third the length of the basal portion of Rs vein. Only two Nearctic species exhibit this venational character, *B. albipennis* and *B. curtipes* (Fitzgerald 1996). Females of these two species are distinguished by leg color. The original description states that the legs are "red or yellowish-red" indicating that this species is a senior synonym of *B. curtipes*. Notes on the intraspecific color variation and an illustration of the male terminalia of *B. tristis* were provided by Fitzgerald (1996).

Bibio tristis has been recorded from Colorado, western Kansas, and Utah (Fitzgerald 1996). Since records of *B. tristis* from Washington (Hardy 1945) and Arizona (McAtee 1922) are likely based upon misidentifications, they are not included.

BIBIO SPECIES CONSIDERED *NOMEN DUBIA*

McAtee (1922) and Hardy (1945) stated that *B. pallipes* Say (1823: 76) may be conspecific with *B. fraternus* or *B. abbreviatus*, but both believed the original description to be inadequate. Neither the original description nor Wiedemann's (1828: 81) reference to the presumed type of *B. pallipes* refer to the length of the hind basitarsus. Since the type(s) of *B. pallipes* are apparently destroyed or lost this name remains unrecognized.

The type(s) of *B. thoracica* Say (1824: 368), described from "East Florida", is apparently destroyed. Wiedemann (1828: 78), presumably referring to a type specimen, stated that "this species had been smashed during mailing so that I was not able to see anything of it except the thorax." Wiedemann (1828) also stated that he "cannot decide whether this species might belong here [Bibio] or to Plecia," but the mention of "spines of the anterior tibia piceus, the exterior one much larger" by Say (1824) clearly places this species as *Bibio*. Hardy (1958) cited *B. thoracicus* as a probable synonym of *B. rufithorax* Wiedemann (1828: 78), even though the female of *B. rufithorax* has the legs entirely black to dark brown, as opposed to Say (1824) who described the legs of *B. thoracicus* as "thighs rufous." Say (1824), describing the female legs as bicolored and the dorsum of the thorax as orange, can only be referring to two species of Nearctic *Bibio*, *B. alienus* McAtee (1923: 62) or one of the color forms of *B. carolinus* Hardy (1945: 457). *Bibio alienus* is not known to occur in Florida. Although *B. carolinus* does occur in eastern Florida (CSUC), females that have the legs bicolored rather than entirely black to dark brown have only been examined from south of the United States. The name *thoracicus* applies to either *B. carolinus* or *B. alienus*, but until the color variation of *B. carolinus* in Florida, and the distribution of *B. alienus*, are better known, the status of the name *B. thoracicus* must remain unsettled.

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